Prairie Creek Sub-basin Coho Life Cycle Monitoring, 1998-2013

Walter Duffy

Humboldt State University

And

USGS California Cooperative Fish and Wildlife Unit (retired)

Acknowledgements

Graduate Student Theses

1) Beesley, S. B.
2) Bell, E.
3) Brakenseik, K. E.
4) Coey, R. M.
5) Feola, J. E.
6) Feral, D.
7) Gonzales, E. J.
8) Gough, S. A.
9) McLaughlin, K.
10) Moore, T.
11) Ransom, B. O.
12) Sparkman, M. D.
13) Tussing, S.
14) Wiley, W. S.
15) Wright, K.

In Progress

16) Deibner-Hanfon, J.
17) Drobney, P.
18) Youmans, B.

Acknowledgements

Collaborators

1) Bjorksted, E. B.
2) Hankin, D.
3) Ricker, S.
4) Roelofs, T.
5) Sparkman, M.
6) Wilzbach, P.

Agencies

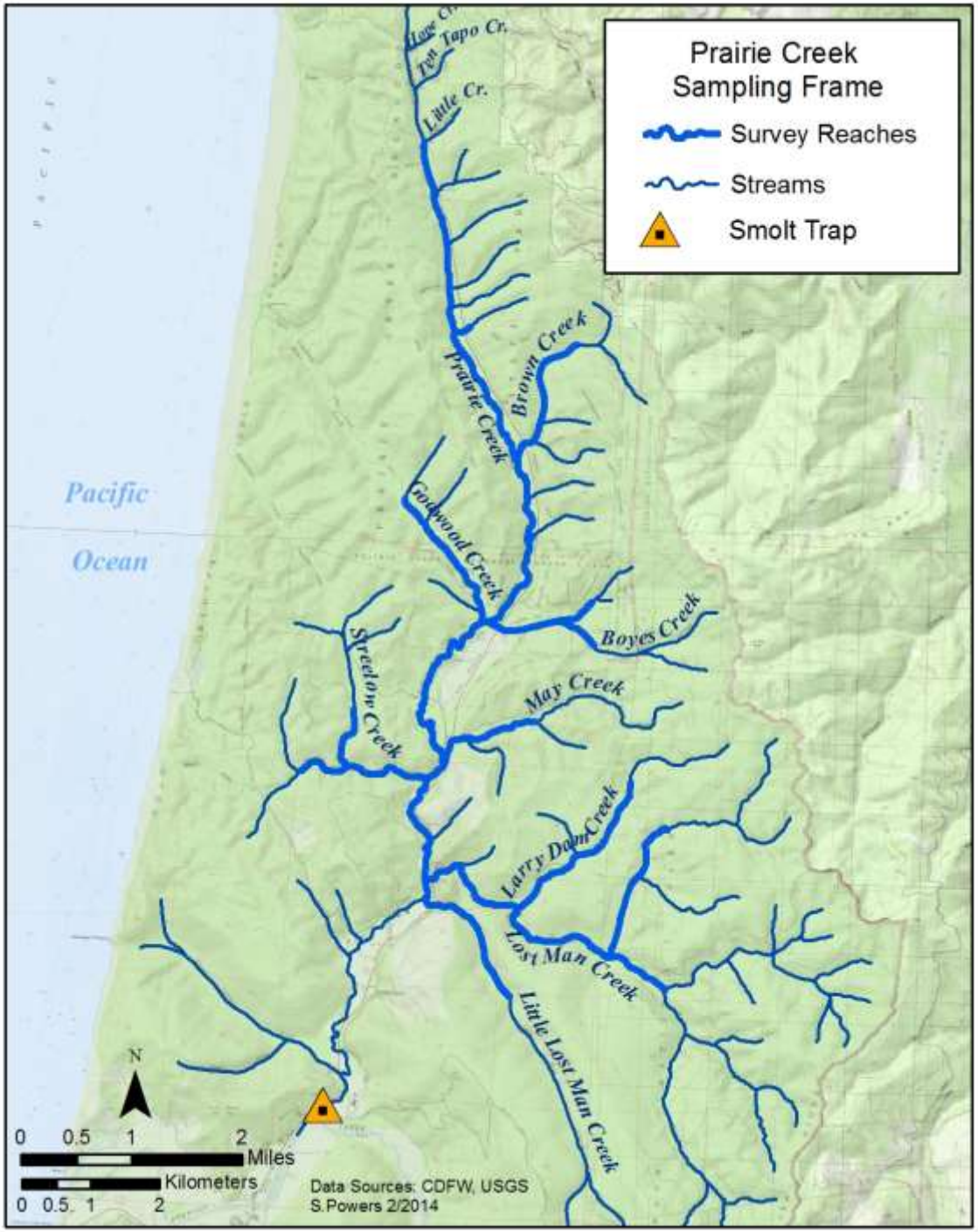
- California Dept. Fish & Wildlife (FRGP)
- NOAA
- Save the Redwoods League
- USGS
- NPS
- California State Parks

Objectives

- Assess how the coho salmon population responds to habitat.
- Monitor the population of coho salmon in Prairie Creek.
- Direct student thesis research to investigate specific aspects of coho salmon ecology.

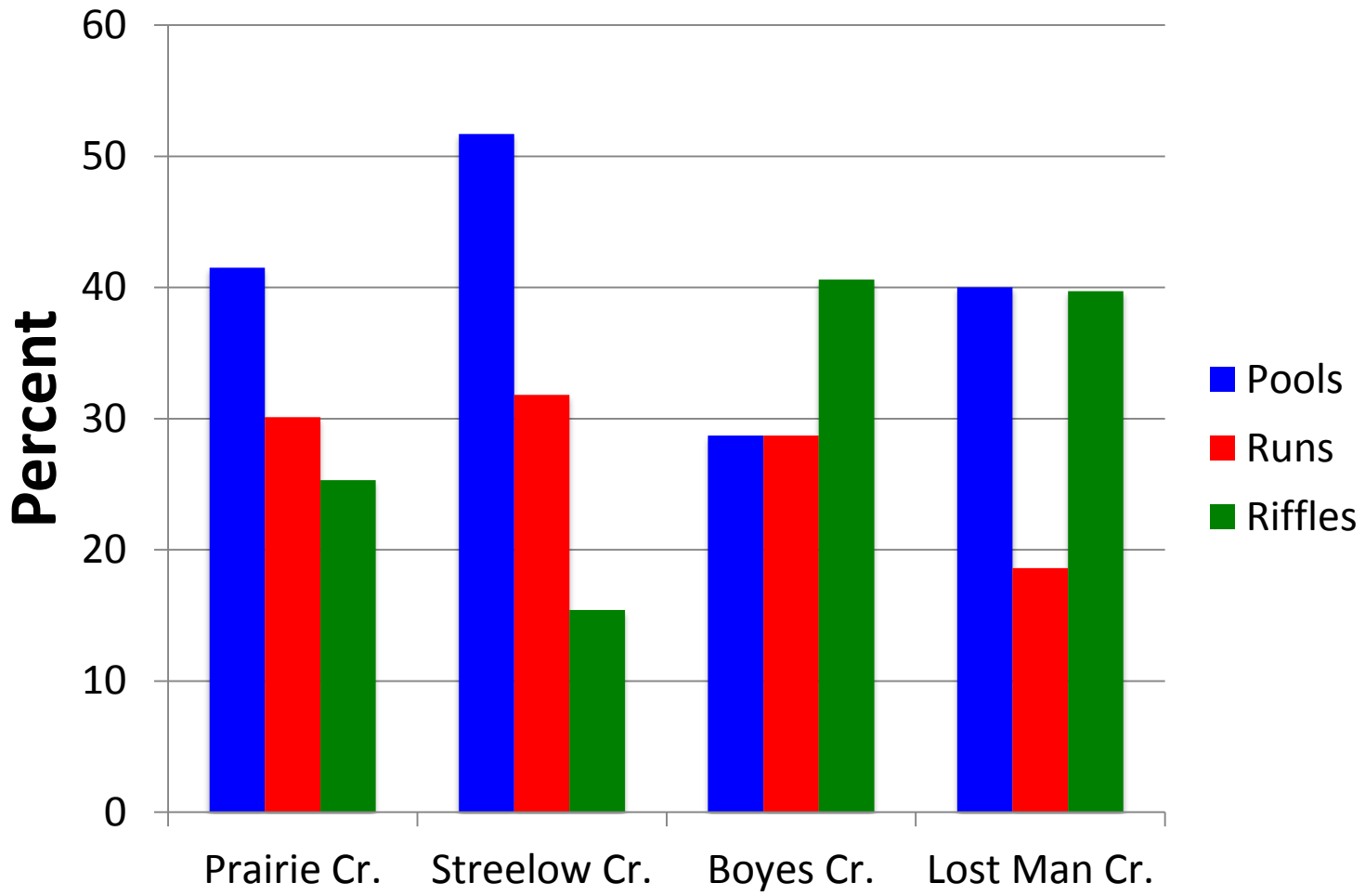
Outline

1. Habitat
2. Adult stage
    1. Escapement abundance
    2. Timing of movement
3. Egg stage
    1. Survival in redds
4. Juvenile stage
    1. Abundance
    2. Growth
    3. Movement
5. Smolt stage


Prairie Creek
Sampling Frame
Survey Reaches
Streams
Smolt Trap
Ten Tapo Cr.
Little Cr.
Brown Creek
Prairie Creek
Godwood Creek
Boyes Creek
Streelow Creek
Mar Creek
Larry Dam Creek
Lost Man Creek
Little Lost Man Creek
Pacific
Ocean
N
0 0.5 1 2
Miles
Kilometers
0 0.5 1 2
Data Sources: CDFW, USGS
S.Powers 2/2014

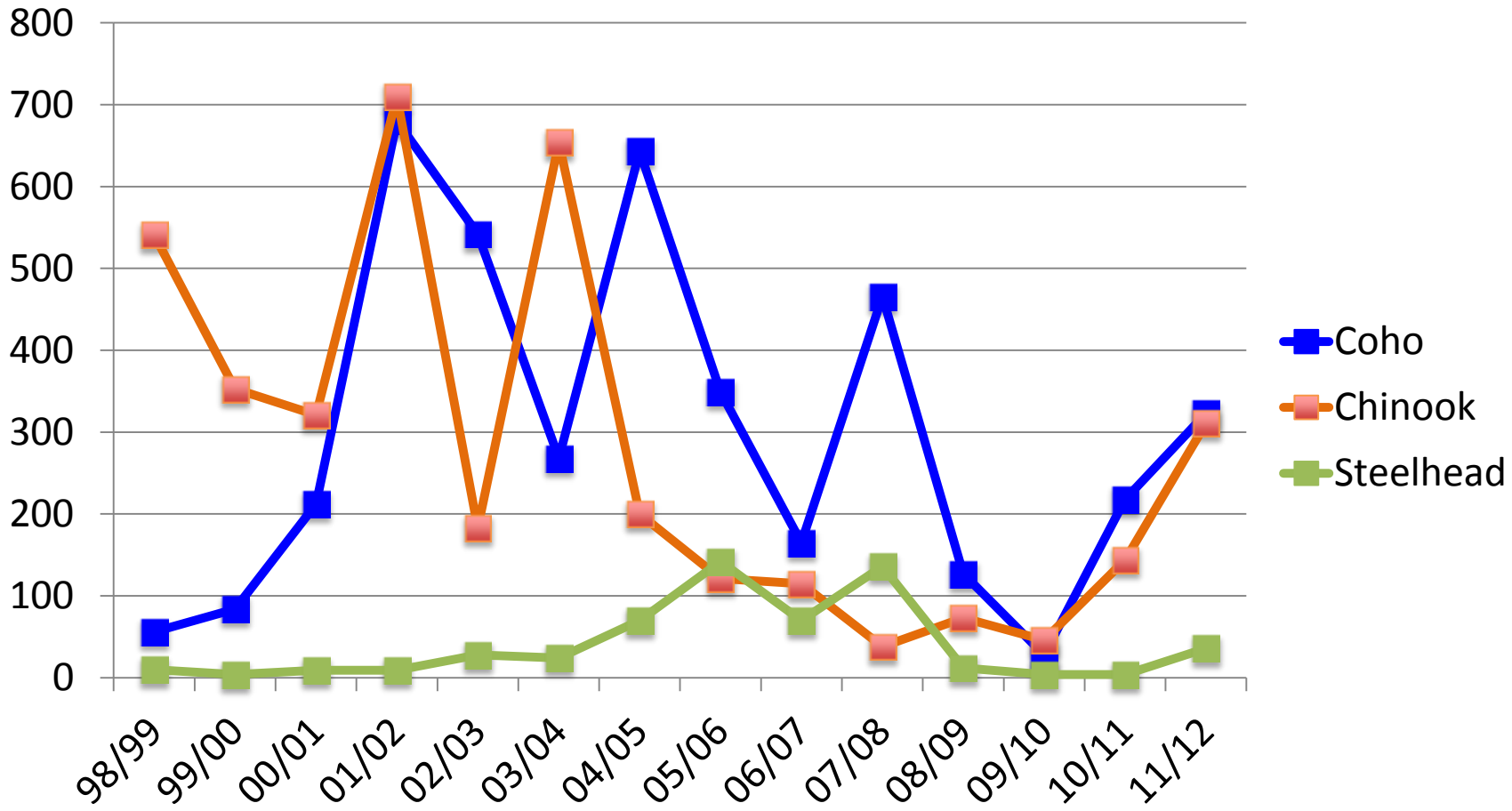
Habitat

Habitat Area



Studies of adults

Estimated escapement of coho, Chinook and steelhead



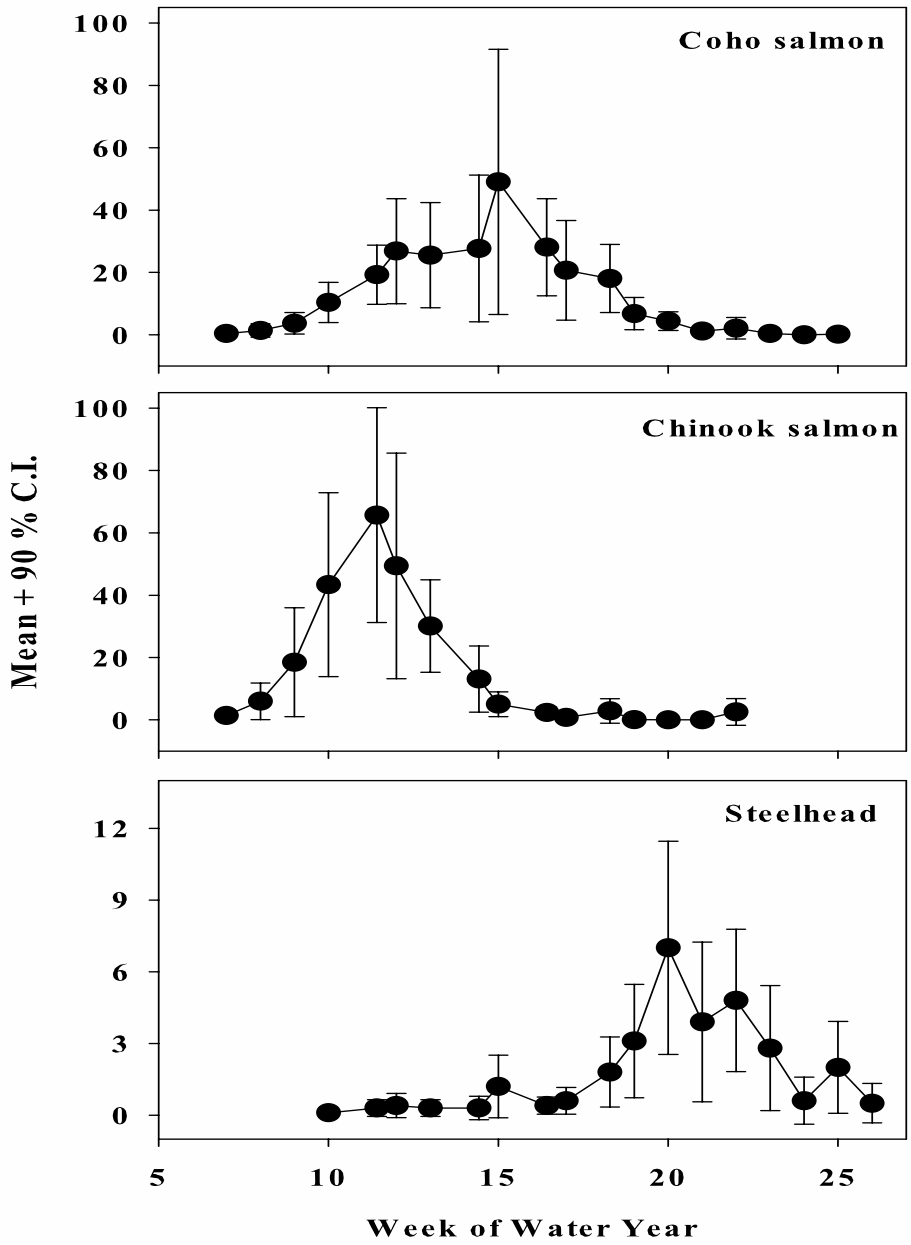
Average timing of adult entry

Peak in entry

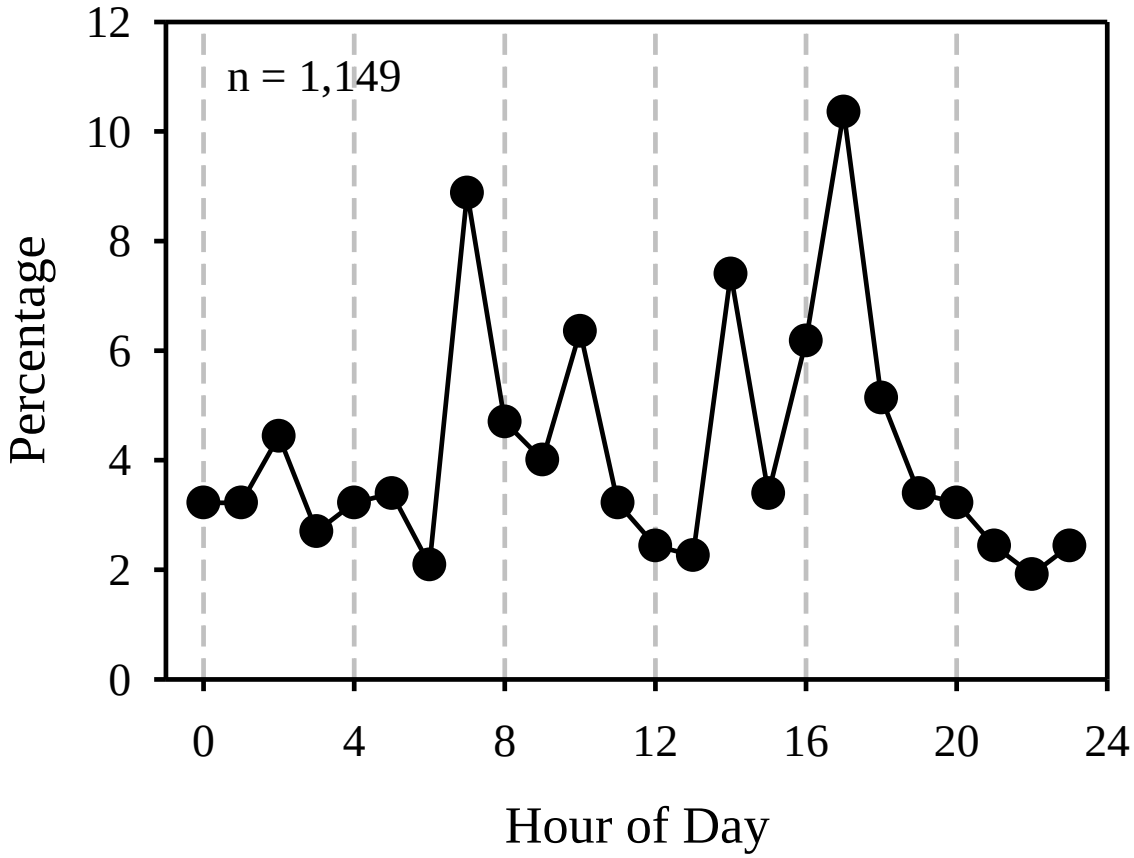
Chinook – Dec 16-23

Coho – Jan 16-23

Steelhead – Mar 1-7

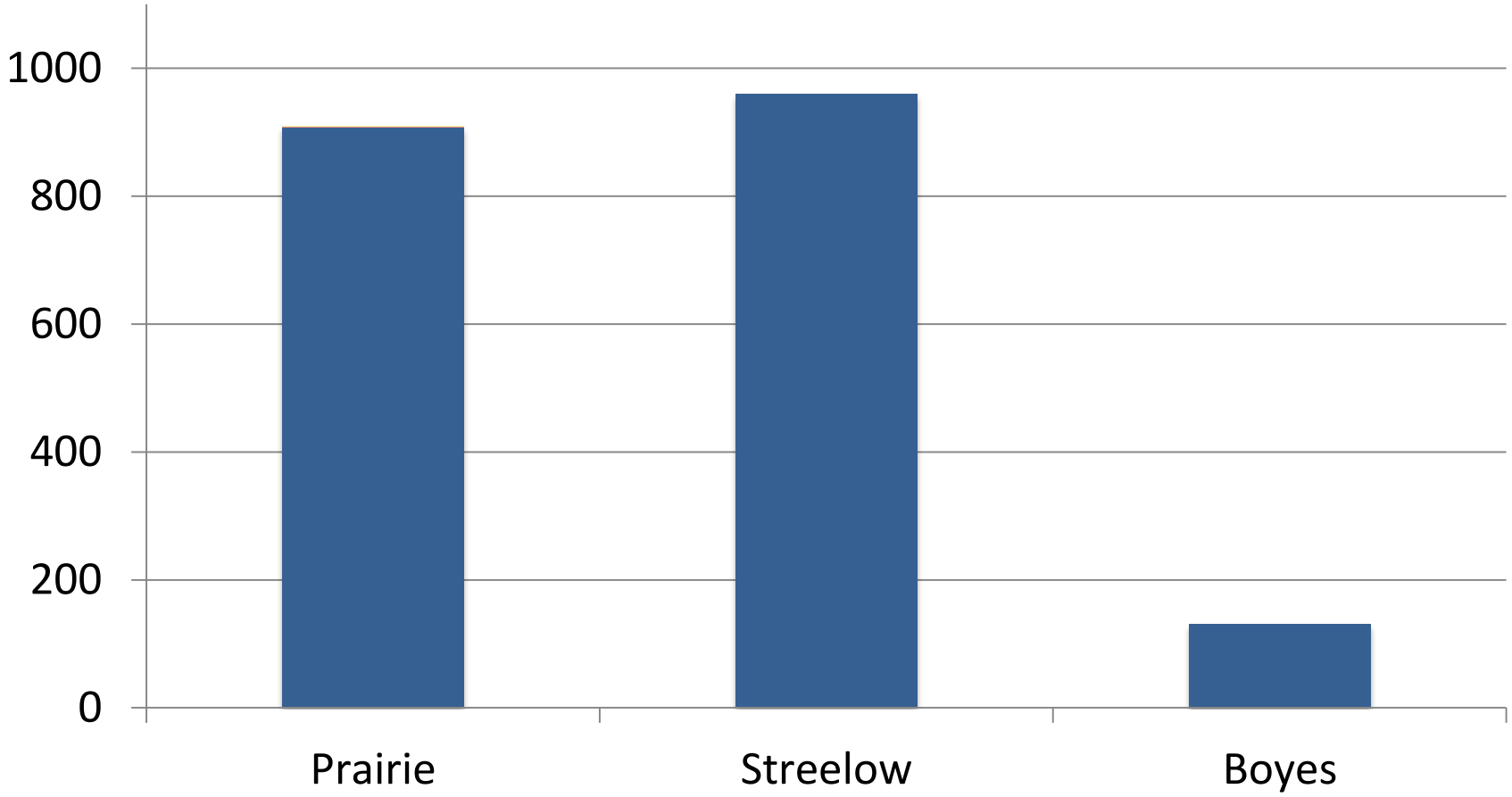


Temporal Migration in Redwood Creek
Nov. 2009 – Jan. 2010

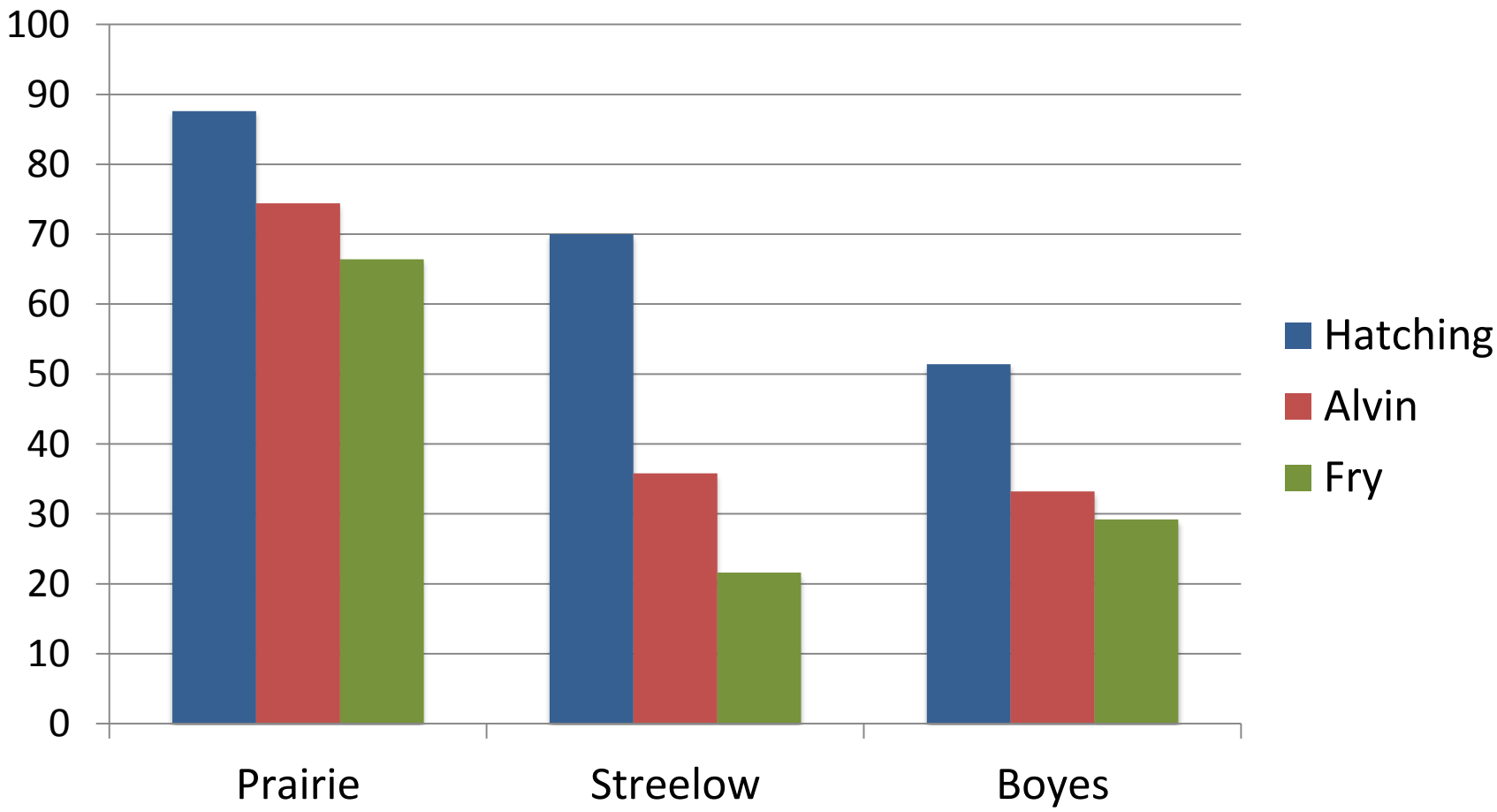


Egg Stage

Fry emerging/redd

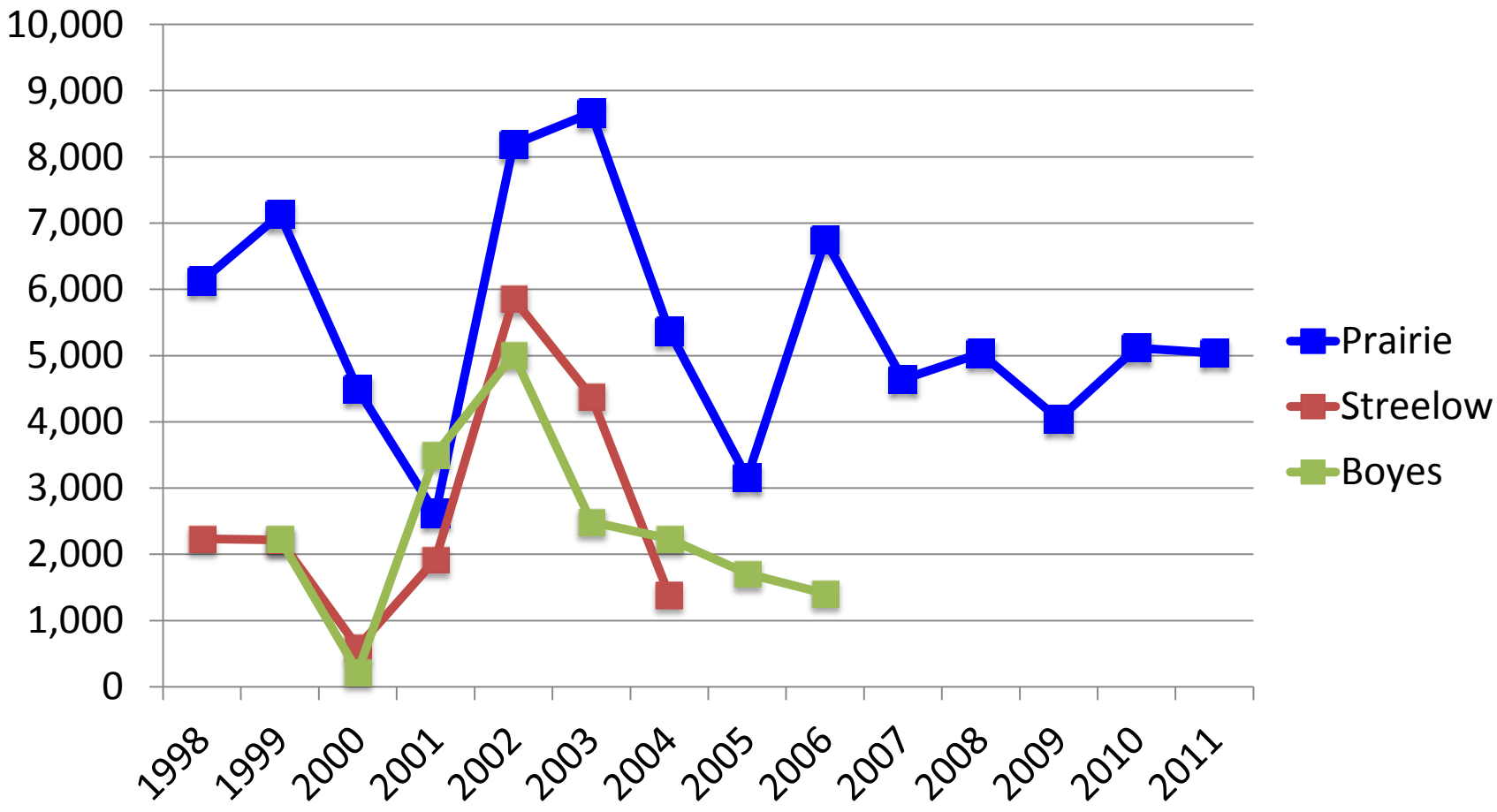


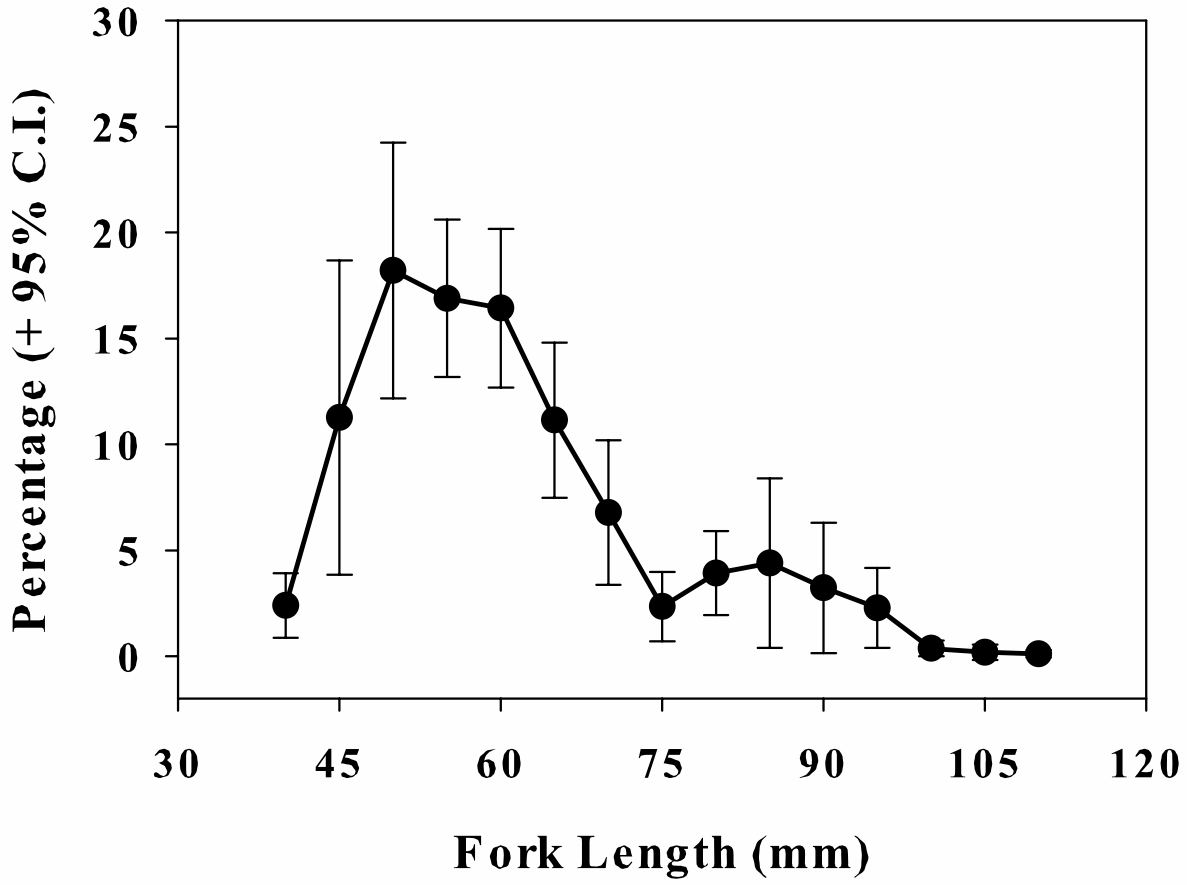
Egg survival to three stages



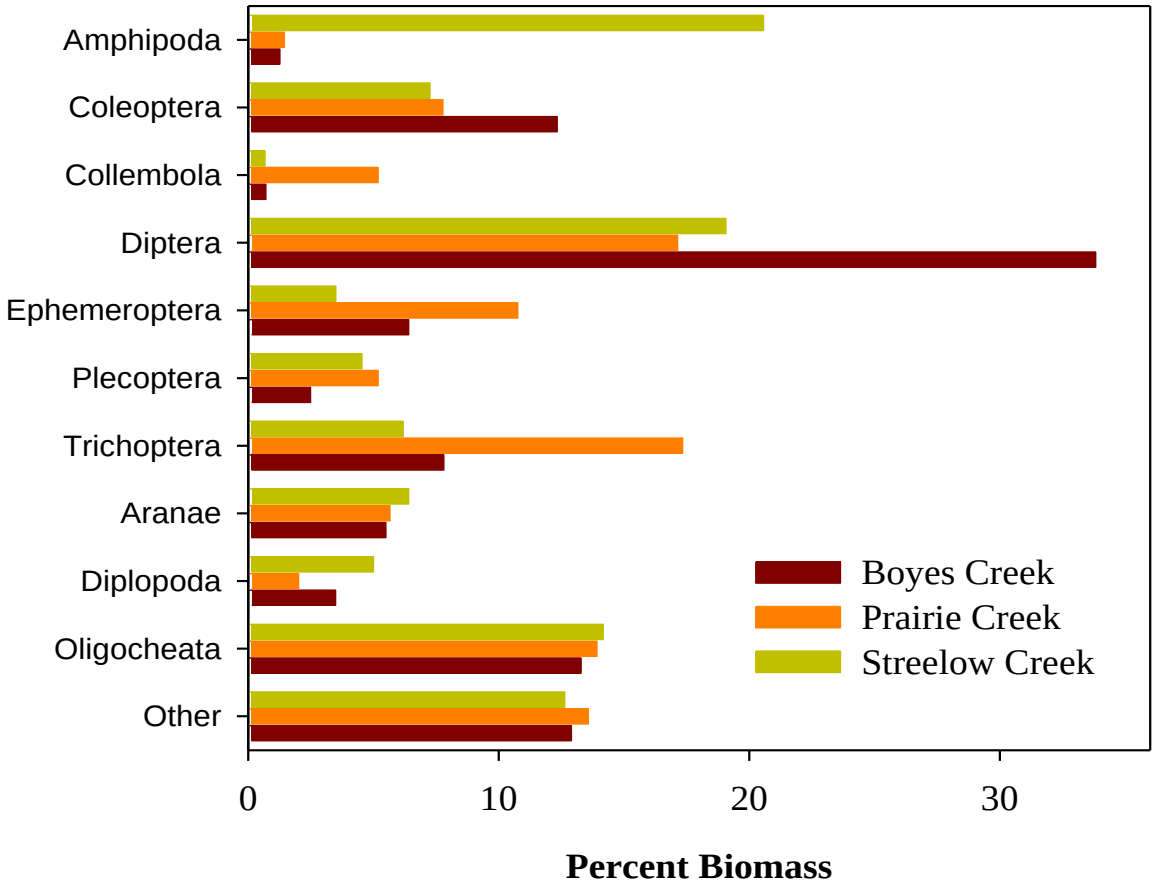
Studies of juveniles

Juvenile abundance

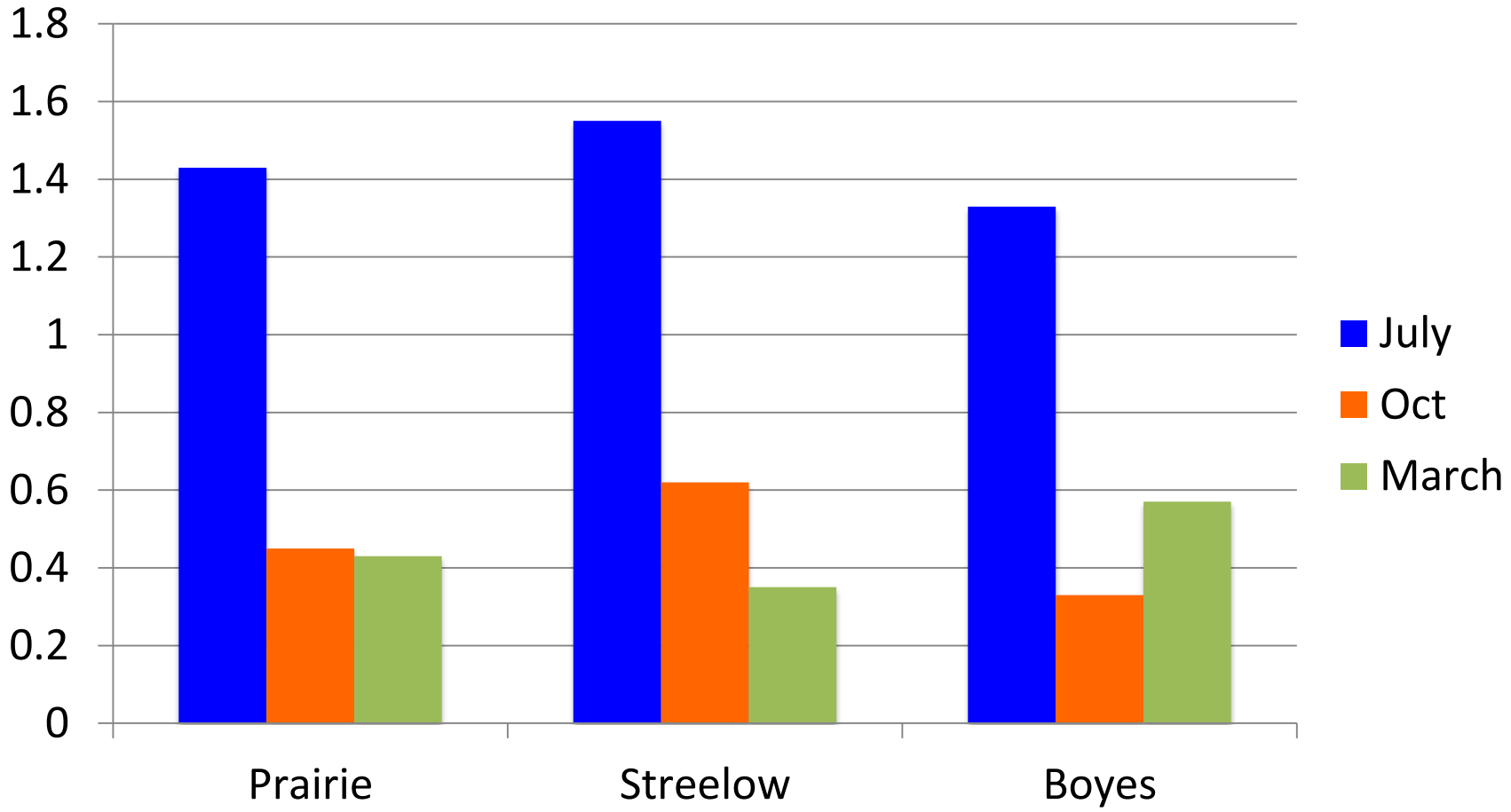



Percentage (+ 95% C.I.)
30
25
20
15
10
5
0
30
45
60
75
90
105
120
Fork Length (mm)

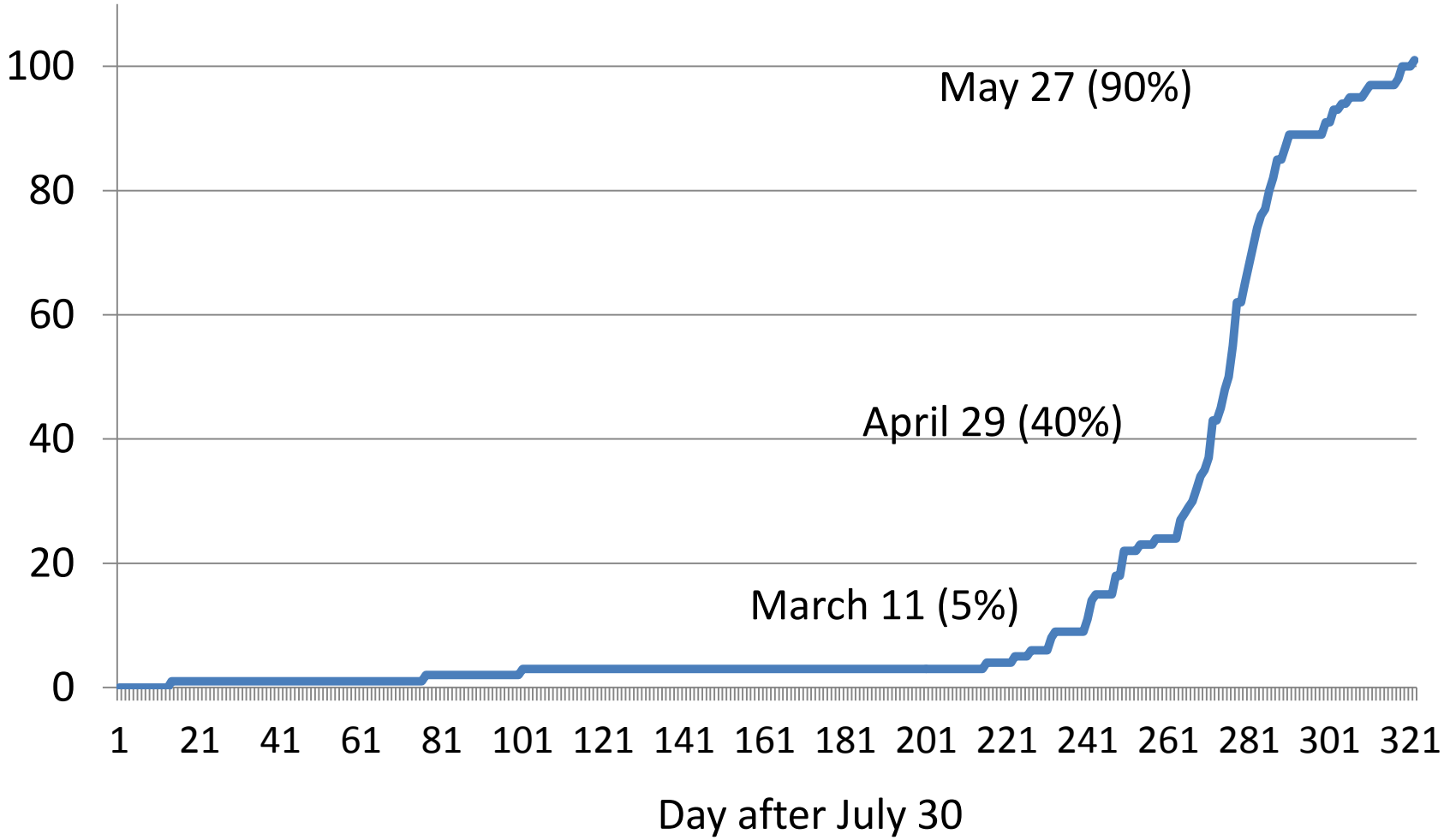
Juvenile coho salmon diet



Specific growth rates (in g/g/d)

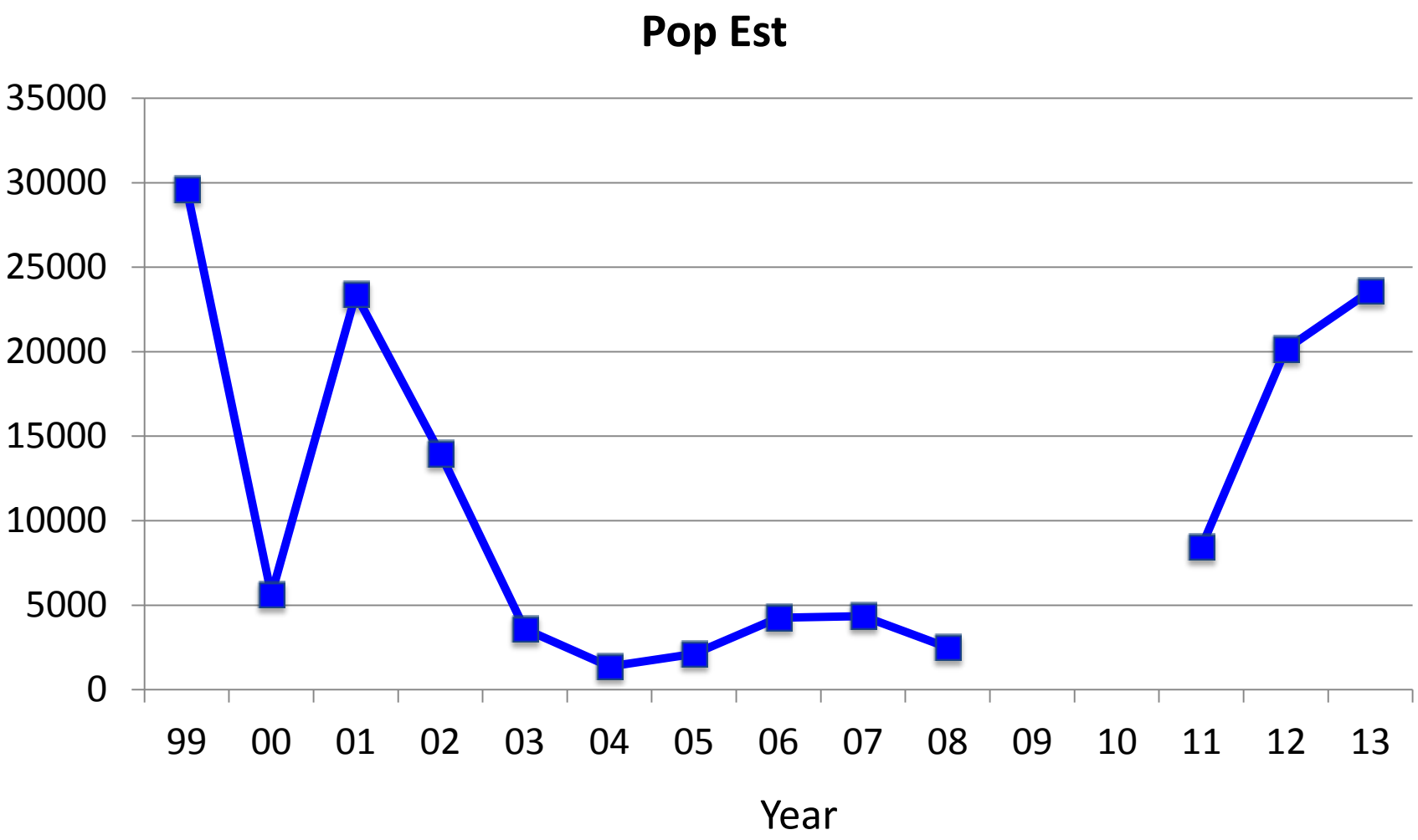


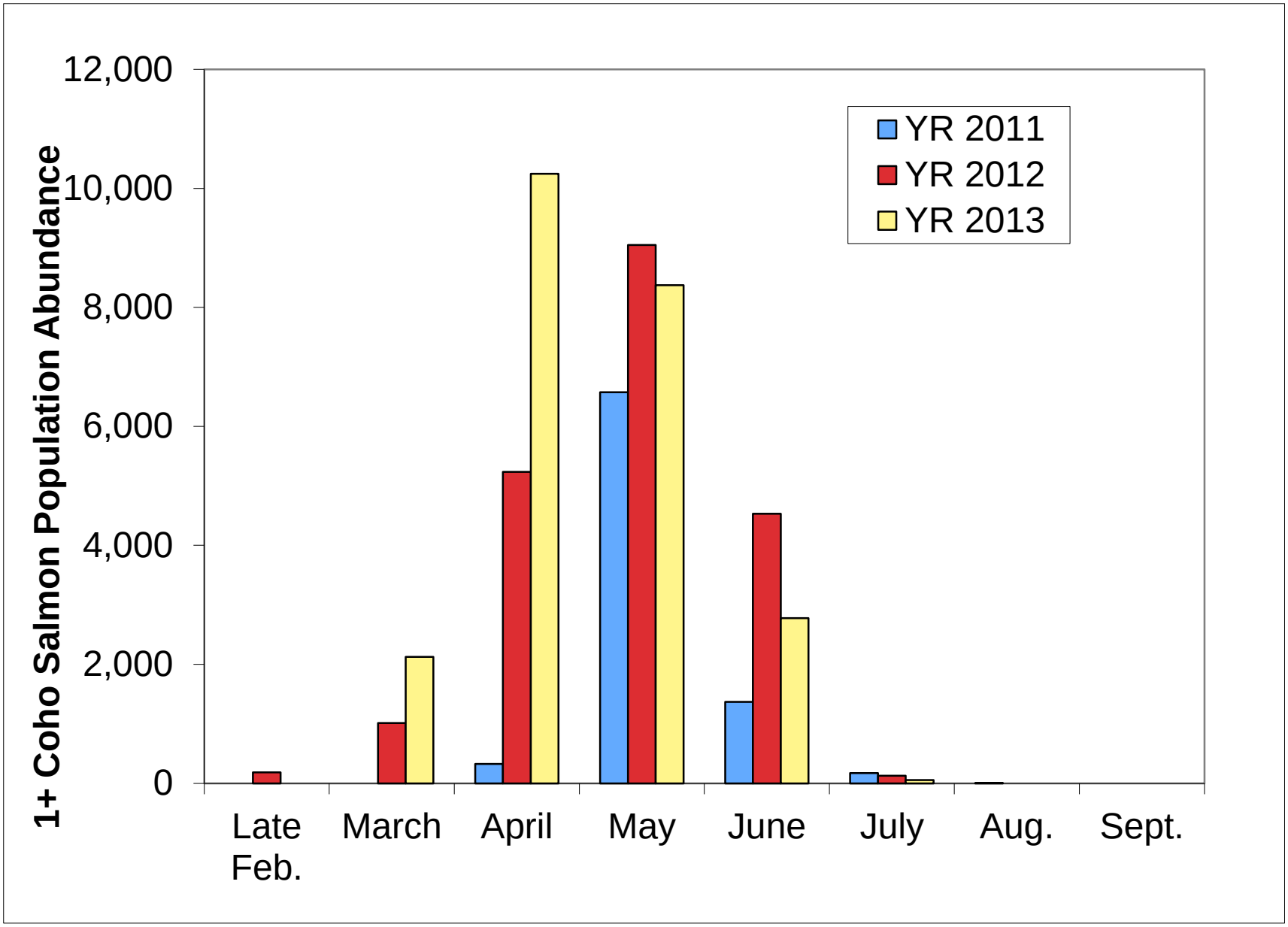
Juvenile coho salmon detected at Bald Hills Rd. antenna (8/1/12 – 6/18/13)



Studies of smolts

Age 1+ coho salmon smolt production




1+ Coho Salmon Population Abundance
12,000
10,000
8,000
6,000
4,000
2,000
0
YR 2011
YR 2012
YR 2013
Late Feb.
March
April
May
June
July
Aug.
Sept.

Thank you